



Pollution Prevention | Appendix Y: Toxics Release Inventory

DoD EPCRA Policy

In 2006, DoD's EPCRA/TRI Working Group, composed of DoD and Military Component subject matter experts, finalized an EPCRA policy entitled "Consolidated Emergency Planning and Community Right-to-Know Act (EPCRA) Policy for DoD Installations, Munitions Activities, and Operational Ranges." This policy explains how Executive Order policies, goals, and requirements apply to DoD installations, and it consolidates and supersedes all previous DoD EPCRA policies issued by the Office of the Secretary of Defense.

In addition, the guidance discusses a revised approach to reporting information on operational ranges, effective CY2007, which highlights the EPCRA definition of "facility" and recognizes that ranges on contiguous property will be reported with the rest of the installation. Operational range activities will continue to be tracked separately from the main installation activities. To make this process more efficient, both the installation and associated operational range would report as "Part B" in Part I, Section 4.2 on the Form R, using the distinct name but the same TRI Facility Identification Number (e.g., Facility X and Facility X Range). DoD does not include facility releases from military munitions, operational range activities, and conventional and chemical military munitions demilitarization in reduction goals.

The Toxics Release Inventory (TRI) provides information about toxic chemicals that enter into the environment at a facility or are transferred offsite for further waste management. Annual TRI reports are filed by facilities and sent to the U.S. Environmental Protection Agency (EPA) where the data is collected and maintained in a publicly accessible toxic chemical database, known as TRI Explorer available at www.epa.gov/triexplorer. Citizens, businesses, and governments can use this database to determine which toxic chemicals are present in their communities, and prepare for any potential emergency releases.

The Department of Defense (DoD) implements the Emergency Planning and Community Right-to-Know Act (EPCRA), including the TRI reporting requirements pursuant to an Executive Order. Executive Order (E.O.) 13423, entitled "Strengthening Federal Environmental, Energy, and Transportation Management," requires each federal facility to continue implementing EPCRA, including TRI reporting, as clarified in the "Instructions for Implementing E.O. 13423." E.O. 13423 revoked E.O. 13148 entitled, "Greening the Government through Leadership in Environmental Management," although E.O. 13148 was in effect during the 2006 TRI reporting year.

E.O. 13148 required federal agencies to reduce reported TRI releases and off-site transfers of toxic chemicals for treatment and disposal by 10 percent annually, or by 40 percent overall by December 31, 2006. E.O. 13148 established 2001 as the baseline year for the TRI reduction goals. This 40 percent reduction is in addition to the 50 percent reduction DoD already achieved between 1994 and 1999 under E.O. 12856, entitled "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements." To further reduce their TRI releases, DoD would require significant resource investment and the development of new technologies to enable substitution while maintaining mission capability. Because of these challenges, DoD did not meet the goal of a 40 percent reduction in TRI releases from the 2001 baseline by the end of Calendar Year (CY) 2006, but DoD will continue to examine efforts to reduce TRI releases under E.O. 13423.

TRI Reporting Requirements

The primary purpose of TRI reporting is to establish an inventory of toxic chemical releases and inform the public about both routine and accidental releases of toxic chemicals into the environment.

DoD installations that manufacture, process, or otherwise use a TRI chemical in quantities greater than the established threshold over the course of a calendar year, must report all releases and waste management activities on chemical inventory forms. TRI-reported releases may have been released evenly over the course of the calendar year, intermittently, or in a single event. A facility may revise its TRI-reported data if new information becomes available, even if this occurs after the reporting deadline has passed. Enabling facilities to revise historical data encourages review and recalculation of original data submissions to improve accuracy.

EPA's original reportable TRI list included 300 toxic chemicals. EPA selected these chemicals based on the criterion that each chemical's toxicity caused serious chronic or acute human health risks or adverse environmental effects. TRI chemicals are removed or delisted through either EPA-initiated action or an independent petition process. Under EPCRA §313(e), any person may petition EPA to add or delete a chemical from the TRI chemical list based on certain criteria. EPA's TRI reporting program is constantly evolving through the addition and deletion of toxic chemicals, chemical categories, newly regulated facilities, and new data elements. The CY2006 TRI toxic chemical list contained over 600 chemicals and 30 chemical categories.

Submissions are due to EPA and state authorities by July 1 of each year for activities that occurred during the previous calendar year. Although the reporting period for this Defense Environmental Programs Annual Report to Congress covers Fiscal Year 2007 (October 1, 2006, through September 30, 2007), the TRI reporting period covers CY2006 (January 1, 2006, through December 31, 2006).

Major Changes to Reporting Requirements

As a result of both EPA changes and DoD interpretations of the TRI reporting requirements, TRI data reported by facilities have changed in the past several years. The most significant changes are described in detail below:

- ▶ Munitions Demilitarization
- ▶ Persistent Bioaccumulative Toxic (PBT) Chemicals
- ▶ Range Reporting
- ▶ Coincidental Manufacturing
- ▶ Deletion of Methyl Ethyl Ketone (MEK).

Munitions Demilitarization

In 2000, DoD began reporting releases and off-site transfers from munitions demilitarization activities. Although reporting releases associated with these activities was not a new requirement, DoD deferred reporting until detailed guidance and tools were developed to ensure consistent reporting.

The Department maintains a large stockpile of munitions. As munitions reach the end of their useful life, it is necessary for DoD to demilitarize excess, obsolete, or unserviceable munitions. Demilitarization activities vary depending on mission requirements, mission activity levels, and the budget available for demilitarization actions.

Persistent Bioaccumulative Toxic Chemicals

In 2000, EPA lowered the reporting threshold for PBT chemicals and added other PBT chemicals to the TRI list of toxic chemicals. PBTs are a concern because they are toxic, remain in the environment for long periods of time, are not readily destroyed, and can accumulate in body tissue.

These lower thresholds required facilities, including DoD installations, to report the amount of PBT chemicals released into air, land, and water at

much lower quantities than were previously reported. EPA finalized two thresholds based on the chemical potential to persist and bioaccumulate in the environment. The two levels include setting manufacture, process, and otherwise use thresholds to 100 pounds for PBT chemicals and to 10 pounds for a subset of PBT chemicals that are highly persistent and highly bioaccumulative. The dioxin and dioxin-like compounds category is an exception, with a threshold of 0.1 grams.

EPA classified lead and lead compounds as PBT chemicals and lowered the 25,000 pound and 10,000 pound thresholds in 2001. Lead and lead compounds were on the original TRI toxic chemical list, but with the ruling, EPA reclassified lead and lead compounds as PBT chemicals due to their bioaccumulative properties. Facilities that manufacture, process, or otherwise use more than 100 pounds of lead or lead compounds must now report releases and off-site transfers, with the exception of lead contained in stainless steel, brass, and bronze alloys. For stainless steel, brass, or bronze alloys (referred to as "qualified alloys") that contain lead, the quantity of lead contained in these alloys is still applied to the 25,000 pound and 10,000 pound reporting thresholds.

Range Reporting

Beginning in 2001, DoD reported releases and off-site transfers associated with operational range activities, including training, live fire, and clearance activities. DoD developed and implemented the necessary tools, such as the TRI Data Delivery System, to identify and report releases from munitions activities on operational ranges, because these methods were not previously available. The system uses emissions factors and munitions use information supplied by installations to calculate the amount of TRI toxic chemicals released.

Coincidental Manufacture

In 2001, DoD published a question-and-answer document that clarified the reporting of toxic chemicals coincidentally manufactured during other processes. Facilities must calculate the amount of TRI chemicals coincidentally manufactured and released as a byproduct and count it towards their TRI threshold. For example, nitrate compounds, one of the most common chemicals reported at DoD installations from coincidental manufacturing, are often produced during wastewater treatment. Other common chemicals reported from coincidental manufacturing include coal combustion byproducts. Facilities that use coal, fuel oil, and other raw materials have the potential to coincidentally manufacture toxic chemicals such as sulfuric acid, hydrochloric acid, hydrogen fluoride, and metal compounds. The presence of chlorine in coal results in the coincidental manufacture of hydrochloric acid during the coal-burning process.

Twenty-four installations reported nitrate compounds in CY2006, compared to 14 facilities in CY2001. Many facilities have since revised their data and submitted updates to EPA to include releases from coincidental manufacturing processes.

Deletion of Methyl Ethyl Ketone

In 2005, EPA published a final rule deleting MEK from the list of TRI toxic chemicals. On May 10, 2005, the D.C. Circuit Court of Appeals ruled in favor of the American Chemistry Council, who had petitioned EPA to remove MEK from the list of toxic chemicals subject to the TRI reporting requirements. The D.C. Circuit Court of Appeals ruled that MEK does not meet the EPCRA toxicity criteria. As a result, facilities are no longer required under EPCRA §313 to report MEK releases and other waste management information, beginning with those activities that occurred during CY2004.

CY2006 TRI Report

DoD is diligent about implementing TRI reporting and reducing releases of toxic chemicals. Through TRI reporting, DoD can identify:

- ▶ Processes that produce releases and off-site transfers of TRI toxic chemicals
- ▶ Procedures or processes that require the use of TRI toxic chemicals
- ▶ Pollution prevention opportunities

This analysis helps DoD develop a strategy for reducing releases and off-site transfers of TRI chemicals. By reducing the use of toxic chemicals, DoD minimizes its impacts on the environment, DoD personnel, their families, and surrounding communities.

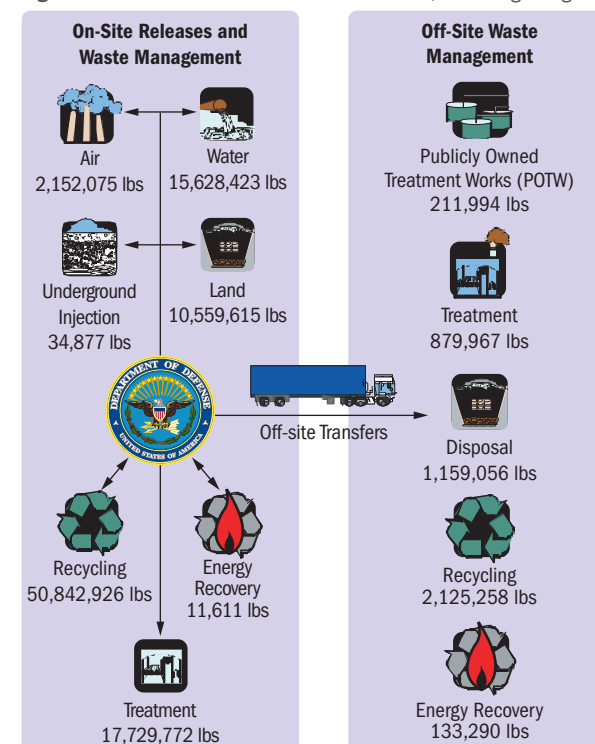
TRI releases prior to CY2000 were largely air releases from painting, depainting, and cleaning operations. Releases to land and water represent the majority of TRI releases in CY2006, as shown in Figure Y-1. TRI chemicals entering the land are primarily metals (i.e., copper, lead) from munitions used on training ranges or treated during open burning and open detonation (OB/OD). TRI chemicals entering the water are mainly from nitrate compounds released as a byproduct from wastewater treatment operations. These types of releases have not been the traditional focus of installation pollution prevention programs.

DoD sent over two million pounds of chemicals offsite to be recycled and recycled over 50 million pounds on site in CY2006, as shown in Figure Y-1. Recycling is an essential process that diverts chemicals from entering landfills, saves energy, and is cost effective.

Several installations submitted revisions for TRI chemicals between CY2001 and CY2006 that update previously reported data. In May 2007, Radford Army Ammunition Plant (AAP) submitted TRI revisions to EPA for nitrate compounds for CY2001

through CY2005. Radford AAP inadvertently reported on their TRI forms the weight of the nitrogen instead of reporting the entire weight of the nitrate (NO₃) compound released. In addition, Red River Army Depot submitted revisions for MEK, methyl isobutyl ketone, toluene, and xylene (mixed isomers) for CY2002 through CY2005. Also, in 2006, the following facilities submitted new data: Fort Indiantown Gap for copper, lead, and lead compounds for CY2004 and CY2005; Defense National Stockpile Center New Haven for lead, manganese, and mercury for CY2003 through CY2005; and Defense National Stockpile Center Warren Depot for chromium, chromium compounds, lead, and mercury for CY2003 through

Figure Y-1 CY2006 TRI Releases and Transfers, including Ranges



CY2005. While all of these changes updated DoD's TRI totals, the revisions for Radford AAP displayed a significant increase in DoD and Army's overall TRI totals between CY2001 through CY2006.

The requirement to report range training activities in CY2001, resulted in many installations that previously were not required to file forms, including many National Guard bases and Reserve installations. As shown in Figure Y-2, range releases accounted for approximately 32 percent of the total DoD TRI releases and off-site transfers in CY2006. In CY2001, 69 facilities reported 4.2 million pounds of range releases and off-site transfers. By CY2006, the number of range installations and range releases had increased, with 77 facilities reporting 9.7 million pounds of releases and off-site transfers. This is the result of increased activities associated with training and deployments.

Figure Y-3 illustrates DoD's total reportable quantities of toxic chemical releases and off-site transfers, including releases from operational ranges. DoD reported 30.6 million pounds of releases and off-site transfers in CY2006, a 22 percent increase from the CY2001 baseline year.

Figure Y-4 shows DoD's toxic chemical releases and off-site transfers since CY2001, not including operational ranges. DoD does not include facility releases from operational range activities in reduction goals. When excluding the chemical amounts reported from operational range activities, DoD's releases and off-site transfers totaled 20.9 million pounds in CY2006. Compared to the CY2001 baseline non-range total of 20.9 million pounds, CY2006 releases represent an increase of 0.2 percent. The largest increase of the reportable quantities is from chemicals sent off site for treatment. Chemicals typically sent off site for treatment included nitroglycerin, xylene (mixed isomers), and n-butyl alcohol. The Department's increase of 0.2 percent did not meet the goal of a 40 percent reduction, but DoD will continue to examine efforts to reduce TRI releases under E.O. 13423.

Figure Y-2 CY2006 TRI Releases and Transfers from Ranges*

Component	Percent
Army	30.0%
Navy	10.8%
Marine Corps	57.5%
Air Force	30.4%
DoD Total	31.7%

* DLA does not have any range facilities.

Figure Y-3 DoD TRI Reportable Quantities, including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	14,417,546	14,758,533	14,720,396	15,047,339	14,132,130	15,628,423	8.4%
On-site to Air	3,022,163	2,553,699	3,107,041	2,190,197	2,205,021	2,152,075	-28.8%
On-site Underground Injection	0	0	0	0	0	34,877	--
On-site Land	5,897,764	7,624,589	7,879,300	6,546,294	7,740,930	10,559,615	79.0%
Off-site to POTW	220,140	270,355	208,522	148,672	221,007	211,994	-3.7%
Off-site Treatment	474,080	580,222	556,324	389,928	681,889	879,967	85.6%
Off-site Disposal	988,849	1,051,985	1,098,065	640,445	651,428	1,159,056	17.2%
Calculated Baseline	25,020,543	26,839,383	27,569,648	24,962,874	25,632,405	30,626,007	22.4%

Figure Y-4 DoD TRI Reportable Quantities, not including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	14,417,446	14,756,997	14,720,355	15,047,185	14,131,901	15,626,580	8.4%
On-site to Air	2,930,456	2,513,184	2,897,006	2,121,824	2,149,462	2,082,746	-28.9%
On-site Underground Injection	0	0	0	0	0	34,877	--
On-site Land	1,870,951	2,032,955	1,188,637	881,555	874,138	1,023,989	-45.3%
Off-site to POTW	220,140	270,355	208,522	148,672	111,007	211,994	-3.7%
Off-site Treatment	474,080	580,222	556,324	389,928	681,889	879,967	85.6%
Off-site Disposal	945,848	1,050,771	1,098,038	640,284	569,423	1,048,825	10.9%
Calculated Baseline	20,858,922	21,204,484	20,668,882	19,229,447	18,517,820	20,908,978	0.2%

Top Ten Chemicals Reported in CY2006

The top ten chemicals released in CY2006, as shown in Figure Y-5, were similar to the CY2001 baseline ten list except for the addition of ethylene glycol, nitroglycerin, and xylene (mixed isomers), and the omission of copper compounds, MEK, and zinc (fume or dust). Releases of nitrate compounds and hydrochloric acid continue to remain on the top 10 list due to coincidentally manufactured reporting requirements. Compared to the CY2001 baseline, nitrate compounds had a 13 percent increase and hydrochloric acid had a 57 percent decrease in CY2006, as shown in Figure Y-6.

Releases of heavy metals and metallic compounds such as aluminum (fume or dust), copper, lead, and lead compounds continued to remain high in CY2006, because of their use on operational ranges and associated increases of training and deployment operational activities.

Nitroglycerin appeared on the top 10 list mainly due to the high releases from Iowa AAP. In CY2006, releases from Iowa AAP accounted for a 78 percent of the overall DoD nitroglycerin releases. This is due to Iowa AAP's increased use of JA-2, a powerful 120mm tank propellant used in armor-piercing ammunition.

Dichloromethane releases increased by nine percent from the CY2001 baseline, as seen in Figure Y-6. Dichloromethane remains a frequently used chemical because it is still one of the main components released during aircraft and vehicle maintenance. Suitable alternatives to these chemicals, which are integral to operations, have yet to be developed.

Xylene remained on DoD's CY2006 top 10 chemical list with an increase in releases and off-site transfers of 40 percent from CY2005. This is primarily due to the Navy's increased ship maintenance activities that use xylene. In addition, ethylene glycol remained on the top 10 list although the releases and off-site transfers decreased nine percent from CY2005.

Figure Y-5 CY2006 Top 10 DoD TRI Chemicals, including Ranges

Chemical Name	Pounds Released or Transferred
Nitrate Compounds	16,003,171
Copper	5,759,548
Lead	2,101,936
Lead Compounds	1,917,832
Nitroglycerin	706,252
Dichloromethane	422,350
Xylene (Mixed Isomers)	374,875
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	370,873
Ethylene Glycol	339,673
Aluminum (Fume or Dust)	325,231

Figure Y-6 Change in CY2001 Top 10 DoD Chemicals, including Ranges (Pounds Released or Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Nitrate Compounds	14,145,949	17,943,634	15,302,832	15,530,463	14,512,774	16,003,171	13.1%
Copper	2,834,102	3,275,746	4,154,942	3,349,513	3,821,405	5,759,548	103.2%
Lead Compounds	1,010,917	1,450,091	1,562,890	1,432,743	1,699,037	1,917,832	89.7%
Lead	976,690	1,143,554	1,340,277	1,033,084	1,141,699	2,101,936	115.2%
Aluminum (Fume Or Dust)	948,188	639,844	438,460	325,005	382,249	325,231	-65.7%
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	854,013	648,271	738,877	453,569	342,039	370,873	-56.6%
Methyl Ethyl Ketone	469,204	530,798	418,684	Delisted	--	--	--
Zinc (Fume Or Dust)	60,899	433,131	521,658	316,906	311,654	323,281	430.9%
Dichloromethane	386,483	391,782	437,515	322,197	479,107	422,350	9.3%
Copper Compounds	206,242	627,995	224,494	166,867	232,643	160,821	-22.0%
Total	21,892,687	27,084,846	25,140,629	22,930,347	22,922,606	27,385,043	25.1%

Top Ten Installations Reported in CY2006

In CY2006, DoD installations involved with the lifecycle of munitions (manufacturing, use, and demilitarization) were DoD's largest reporters of TRI releases and off-site transfers, as shown in Figure Y-7.

Of the CY2006 top 10 installations, Radford AAP is the largest contributor of DoD releases with a five percent increase in releases from the CY2001 baseline, as seen in Figure Y-8. Radford AAP is the only installation to remain a DoD top 10 installation from the CY2001 baseline list. Radford AAP's releases to water are a result of the facility's propellant manufacturing operations.

The Army Maneuver Support Center, Chocolate Mountain Aerial Gunnery Range Complex, Fort Sill DPW/EQD, Fort Bragg Range, and White Sands Missile Range reported releases and off-site transfers associated with operational range activities, including range training, live fire, and clearance activities. Range releases generally consist of aluminum (fume or dust), copper, copper compounds, lead, and lead compounds.

Anniston Army Depot had a 10 percent decrease in releases and off-site transfers in CY2006 from CY2005. Anniston Army Depot reported releases associated with demilitarized munitions, typically from OB/OD.

Camp Lejeune had a six percent increase in CY2006 compared to CY2005. MCB Camp Lejeune reported high levels of nitrate compounds, which can be attributed to discharges from wastewater treatment plants.

Iowa AAP was a new installation on the CY2006 top 10 list. Iowa AAP had a significant increase in releases in CY2006 compared to CY2005, mainly due to releases from nitroglycerin.

MCB Camp Pendleton had a 40 percent increase in releases in CY2006 from CY2005. This can be attributed to nitrate compounds that are released during the wastewater treatment process.

Figure Y-7 CY2006 Top 10 DoD TRI Installations, including Ranges

Installation Name	Pounds Released or Transferred
Radford AAP	13,757,844
Army Maneuver Support Center	1,507,799
White Sands Missile Range	878,467
Anniston Army Depot	624,530
Iowa AAP	610,358
Fort Bragg Range	555,636
Fort Sill DPW/EQD	543,358
Camp Lejeune	537,250
Chocolate Mountain Aerial Gunnery Range Complex	503,152
Camp Pendleton	422,251

Figure Y-8 Change in CY2001 Top 10 DoD Installations, including Ranges (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Radford AAP	13,154,293	12,802,934	13,003,158	12,818,237	11,704,540	13,757,844	4.6%
Tinker AFB	479,956	293,605	314,686	110,287	126,941	109,490	-77.2%
Puget Sound Naval Shipyard*	479,773	139,465	158,307	278,741	377,515	404,717	-15.6%
Sierra Army Depot	441,409	859	509	3,477	0	0	-100.0%
Fort Wainwright	440,103	166,503	168,547	148,814	121,821	81,110	-81.6%
NAB Little Creek	365,135	271,569	278,476	269,395	261,688	122,000	-66.6%
Pearl Harbor Naval Complex	359,220	460,229	371,644	294,092	517,958	329,226	-8.3%
Schofield Barracks/Wheeler Army Airfield	326,667	420,317	312,930	115,489	0	0	-100.0%
Nellis AFB Training Range	309,581	422,261	374,558	168,529	99,395	205,718	-33.5%
Twentynine Palms Range	293,501	261,452	48,813	97,089	622,052	353,074	20.3%
Total	16,649,638	15,239,194	15,031,628	14,304,150	13,831,910	15,363,179	-7.7%

* As a result of regionalization efforts, Puget Sound Naval Shipyard began reporting as PSNS & IMF – Bremerton Site & Naval Base Kitsap beginning in CY2004.

Army

In CY2006, 81 Army facilities reported releases and off-site transfers on 273 TRI chemicals totaling 23.9 million pounds, a 27 percent increase since CY2001, as depicted in Figure Y-9. Of the CY2006 Army TRI releases, range releases totaled 7.2 million pounds. When excluding the chemical amounts reported from operational range activities, the Army's releases and off-site transfers totaled 16.7 million pounds in CY2006, an increase of 4.5 percent, as shown in Figure Y-10.

Chemicals entering the land on ranges (e.g., copper, lead, lead compounds) were also prevalent throughout the Army's top 10 chemical list, as shown in Figure Y-11. These releases did not decrease in CY2006 because of an increase in operational training, depot activity, and ammunition production required by the Global War on Terror. Several of the chemicals used on ranges were also on the Army's CY2001 top 10 list, as shown in Figure Y-12. Nitrate compounds remained the highest contributor of the Army's TRI releases from CY2001 through CY2006. The primary source of the Army's nitrate compounds releases come from Radford AAP's propellant manufacturing operations. The Army had a 591 percent increase in nitroglycerin releases in CY2006 compared to CY2005. This increase is attributed to Iowa AAP's increased use of JA-2, a powerful 120mm tank propellant used in armor-piercing ammunition.

Radford AAP remained the top releaser of chemicals in CY2006, as shown in Figure Y-13. In May 2007, Radford AAP sent EPA revised CY2001 through CY2005 data for nitrate compounds. The revised data are shown in Figure Y-14. Instead of reporting the entire weight of the nitrate (NO₃) compound released, Radford AAP inadvertently reported only the weight of the nitrogen. The corrected nitrate compounds data is more than four times the original submission, and double the previously reported total Army toxic releases. Because Radford AAP separately reported nitrogen releases

Figure Y-9 Army TRI Reportable Quantities, including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	13,125,507	13,080,106	12,980,397	12,708,832	11,673,964	13,596,979	3.6%
On-site to Air	1,289,091	1,359,027	1,549,231	983,524	976,493	1,068,160	-17.1%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	3,786,460	5,039,861	5,891,132	4,660,995	5,325,766	7,796,233	105.9%
Off-site to POTW	7,420	67,026	25,971	22,636	24,363	26,399	255.8%
Off-site Treatment	185,566	267,714	315,500	229,321	498,827	588,279	217.0%
Off-site Disposal	438,124	746,166	718,296	261,622	257,454	793,608	81.2%
Calculated Baseline	18,832,169	20,559,900	21,480,527	18,866,929	18,756,868	23,869,658	26.7%

Figure Y-10 Army TRI Reportable Quantities, not including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	13,125,407	13,080,051	12,980,356	12,708,679	11,673,927	13,595,136	3.6%
On-site to Air	1,201,440	1,330,136	1,404,811	968,296	960,048	1,053,926	-12.3%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	1,025,063	1,373,997	677,568	452,452	611,879	665,446	-35.1%
Off-site to POTW	7,420	67,026	25,971	22,636	24,363	26,399	255.8%
Off-site Treatment	185,566	267,714	315,500	229,321	498,827	588,279	217.0%
Off-site Disposal	438,124	745,380	718,269	261,475	256,002	778,620	77.7%
Calculated Baseline	15,983,021	16,864,304	16,122,475	14,642,858	14,025,047	16,707,805	4.5%

Figure Y-11 CY2006 Top 10 Army Chemicals, including Ranges

Chemical Name	Pounds Released or Transferred
Nitrate Compounds	13,706,409
Copper	4,431,844
Lead	1,873,110
Lead Compounds	1,130,192
Nitroglycerin	636,870
Dichloromethane	262,581
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	217,529
Zinc (Fume or Dust)	201,281
Phosphorous (Yellow or White)	174,725
Ethylene Glycol	151,126

in compliance with their wastewater treatment permit, EPA and state regulators were aware of the magnitude of the nitrate compounds releases. But other parties using Radford AAP TRI data would have underestimated the amount and the impact of the nitrate compound releases.

As shown in Figure Y-14, Sierra Army Depot and Schofield Barracks/Wheeler Army Airfield reported zero releases in CY2006. In 2001, Sierra Army Depot ceased its mission to renovate and demilitarize ammunition using the OB/OD process. As a result, the ammunition warehouse at Sierra Army Depot was closed. In CY2004, the waste water treatment plant at Schofield Barracks/Wheeler Army Airfield was privatized. This resulted in a reduction of nitrate compounds releases.

Without addressing Radford AAP's operations and facilities, the Army cannot significantly reduce toxic chemical releases and disposal. In addition, other significant Army TRI chemicals released or disposed of include nitroglycerin primarily from Iowa AAP; dichloromethane, trichloroethylene, and formic acid from Anniston Army Depot's surface coating operations; hydrochloric acid aerosols primarily from Radford AAP's manufacturing process; ethylene glycol primarily from Letterkenny Army Depot; and methyl isobutyl ketone, toluene, and xylene from solvent and paint use at depots, ammunition plants, and troop installations. As a result, the Army did not meet the E.O. 13148 reduction goal in CY2006.

Figure Y-12 Change in CY2001 Top 10 Army Chemicals, including Ranges (Pounds Released and Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Nitrate Compounds	13,489,464	13,608,399	13,348,601	13,074,774	11,899,699	13,706,409	1.6%
Copper	1,722,224	2,018,669	3,366,557	2,526,771	2,803,934	4,431,844	157.3%
Lead	679,642	974,454	1,145,886	862,086	925,885	1,873,110	175.6%
Aluminum (Fume Or Dust)	665,824	633,764	161,087	97,170	104,485	125,038	-81.2%
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	634,263	426,860	490,432	226,661	157,735	217,529	-65.7%
Lead Compounds	577,222	826,077	1,001,005	953,286	1,011,127	1,130,192	95.8%
Methyl Ethyl Ketone	176,424	255,037	191,126	Delisted	--	--	--
Copper Compounds	156,650	577,085	155,658	87,985	149,535	73,278	-53.2%
Nitroglycerin	156,305	155,969	193,003	116,551	92,151	636,870	307.5%
Dichloromethane	122,015	152,265	178,612	94,668	297,753	262,581	115.2%

Figure Y-13 CY2006 Top 10 Army Installations, including Ranges

Installation Name	Pounds Released or Transferred
Radford AAP	13,757,844
Army Maneuver Support Center	1,507,799
White Sands Missile Range	878,467
Anniston Army Depot	624,530
Iowa AAP	610,358
Fort Bragg Range	555,636
Fort Sill DPW/EQD	543,358
Fort Benning Range	410,604
McAlester AAP	375,601
Mobilization Center Shelby Range Control	319,083

Figure Y-14 Change in CY2001 Top 10 Army Installations, including Ranges (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Radford AAP	13,154,293	12,802,934	13,003,158	12,818,237	11,704,540	13,757,844	4.6%
Sierra Army Depot	441,409	859	509	3,477	0	0	-100.0%
Fort Wainwright	440,103	166,503	168,547	148,814	121,821	81,110	-81.6%
Schofield Barracks/ Wheeler Army Airfield	326,667	420,317	312,930	115,489	0	0	-100.0%
Anniston Army Depot	283,462	719,241	557,770	365,832	694,698	624,530	120.3%
Fort Hood Range	263,902	263,902	522,621	97,163	219,942	144,774	-45.1%
Fort Benning Range	251,363	157,270	303,210	77,256	371,939	410,604	63.4%
Fort Bragg Range	245,215	403,638	385,454	429,653	459,717	555,636	126.6%
Holston AAP	235,302	269,214	254,538	107,588	139,956	86,757	-63.1%
Red River Army Depot	216,679	147,981	172,347	154,805	160,410	159,946	-26.2%

Navy

In CY2006, Navy facilities reported 2.0 million pounds of releases and off-site transfers, a 22 percent decrease since CY2001, as depicted in Figure Y-15. Of the CY2006 Navy TRI releases, range releases totaled 0.2 million pounds. When excluding the chemical amounts reported from operational range activities, the Navy's releases and off-site transfers totaled 1.8 million pounds in CY2006, a decrease of 30 percent. The Navy was successful in achieving a 70 percent reduction in TRI releases and off-site transfers during CY1994 to CY1999. Although significant strides were made in reducing TRI releases between CY2001 and CY2006, the Navy's 30 percent TRI reduction fell short of achieving the 40 percent reduction goal outlined in E.O. 13148, as displayed in Figure Y-16.

The Navy's CY2006 top 10 chemicals are shown in Figure Y-17. The largest releases came from nitrate compounds, which are a result of wastewater treatment operations. Overall chemical usage was high, including chemicals used during training operations to support the Global War of Terror. The Navy submitted revised forms for nine facilities in CY2005 to better reflect TRI releases under the revised reporting guidance for transient refueling and coincidental manufacture; thereby adjusting the Navy's CY2001 baseline totals, which are reflected in Figure Y-18. Xylene releases also remained high due to an increase in ship maintenance.

The top 10 installation list displayed in Figure Y-19, shows PSNS & IMF Bremerton Site & Naval Base Kitsap as the top CY2006 releaser of TRI chemicals. This installation reported as Puget Sound Naval Shipyard in CY2001, but due to regionalization efforts, it began reporting as PSNS & IMF Bremerton Site & Naval Base Kitsap in CY2004, which resulted in higher TRI chemical release and off-site transfers.

Figure Y-15 Navy TRI Reportable Quantities, including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-2006 % Change
On-site to Water	891,271	882,194	899,992	966,038	1,104,761	697,985	-21.7%
On-site to Air	695,862	687,568	711,667	619,995	602,539	430,269	-38.2%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	363,280	270,468	527,574	384,370	391,563	234,031	-35.6%
Off-site to POTW	950	1,316	837	17,949	111,237	150,505	15,741.2%
Off-site Treatment	184,477	133,229	63,775	88,949	103,241	232,434	26.0%
Off-site Disposal	379,994	166,035	245,211	260,942	267,072	220,753	-41.9%
Calculated Baseline	2,515,835	2,140,810	2,449,057	2,338,242	2,580,412	1,965,977	-21.9%

Figure Y-16 Navy TRI Reportable Quantities, not including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-2006 % Change
On-site to Water	891,271	882,194	899,992	966,038	1,104,759	697,985	-21.7%
On-site to Air	695,859	682,853	649,146	569,732	569,106	412,531	-40.7%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	349,859	257,395	283,319	195,048	139,097	47,388	-86.5%
Off-site to POTW	950	1,316	837	17,949	1,237	150,505	15,741.2%
Off-site Treatment	184,476	133,229	63,775	88,949	103,241	232,434	26.0%
Off-site Disposal	379,994	165,763	245,211	260,928	260,917	212,453	-44.1%
Calculated Baseline	2,502,410	2,122,750	2,142,281	2,098,643	2,178,356	1,753,296	-29.9%

Figure Y-17 CY2006 Top 10 Navy Chemicals, including Ranges

Chemical Name	Pounds Released or Transferred
Nitrate Compounds	879,898
Xylene (Mixed Isomers)	222,541
Aluminum (Fume or Dust)	187,970
N-Butyl Alcohol	180,488
Zinc (Fume or Dust)	122,000
Copper Compounds	87,543
Lead	86,455
Copper	59,370
Ethylene Glycol	27,462
Ammonia	20,420

The CY2001 top 10 installations reported in Figure Y-20, show the installations' releases and off-site transfers over time. NSWC Crane Division showed over a 98 percent reduction in chemical releases and off-site transfers. Naval Amphibious Base (NAB) Little Creek, had a 67 percent reduction in releases and off-site transfers. This can be attributed to the coal-fired heating plant that was replaced with a natural gas plant at NAB Little Creek in July 2006. This yielded a dramatic reduction of over 130,000 pounds of TRI releases in CY2006. It is anticipated that this process will result in zero releases of zinc (fume or dust) from NAB Little Creek in the future.

Figure Y-18 Change in CY2006 Top 10 Navy Chemicals, including Ranges (Pounds Released or Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Nitrate Compounds	924,292	1,035,877	935,734	1,037,643	1,248,784	879,898	-4.8%
Copper	415,190	146,113	227,078	140,137	113,956	59,370	-85.7%
Zinc (Fume Or Dust)	365,135	271,451	278,363	269,286	261,582	122,000	-66.6%
Lead	126,425	25,690	59,711	44,031	39,916	86,455	-31.6%
N-Butyl Alcohol	111,743	169,139	127,093	110,750	152,358	180,488	61.5%
Ethylene Glycol	67,452	27,550	17,594	75,723	69,260	27,462	-59.3%
Xylene (Mixed Isomers)	66,959	92,514	83,824	64,416	92,458	222,541	232.4%
Ammonia	55,300	59,799	0	55,300	0	20,420	-63.1%
N-Methyl-2-Pyrrolidone	51,660	21,200	4,133	9,254	12,658	7,391	-85.7%
Copper Compounds	50,364	50,910	68,836	78,882	83,108	87,543	73.8%

Figure Y-19 CY2006 Top 10 Navy Installations, including Ranges

Installation Name	Pounds Released or Transferred
PSNS & IMF—Bremerton Site & Naval Base Kitsap*	404,717
Pearl Harbor Naval Complex	329,226
NAVSTA Mayport	151,577
Ventura County Point Mugu	150,065
Norfolk Naval Shipyard	134,515
NAB Little Creek	122,000
Naval Support Facility Indian Head	82,589
Kings Bay Naval Submarine Base	79,062
NAS Fallon, Bravo 17	76,612
COMNAVMARIANAS Guam	76,156

* As a result of regionalization efforts, Puget Sound Naval Shipyard began reporting as PSNS & IMF -- Bremerton Site & Naval Base Kitsap beginning in CY2004.

Figure Y-20 Change in CY2001 Top 10 Navy Installations, including Ranges (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Puget Sound Naval Shipyard*	479,773	139,465	158,307	278,741	377,515	404,717	-15.6%
NAB Little Creek	365,135	271,569	278,476	269,395	261,688	122,000	-66.6%
Pearl Harbor Naval Complex	359,220	460,229	371,644	294,092	517,958	329,226	-8.3%
NSWC Crane Division	264,937	156,409	366,710	224,092	151,797	6,184	-97.7%
NAS Jacksonville	152,795	188,561	248,753	204,528	279,145	51,991	-66.0%
NAS Corpus Christi	151,660	115,496	116,238	219,093	83,879	22,826	-84.9%
Norfolk Naval Shipyard	139,901	209,134	122,837	119,916	36,346	134,515	-3.9%
COMNAVMARIANAS Guam	125,000	124,731	71,635	83,376	105,364	76,156	-39.1%
NAVSTA Mayport	114,457	123,788	202,212	160,012	157,018	151,577	32.4%
NAWS China Lake	89,018	60,480	63,203	67,725	31,053	2,909	-96.7%

* As a result of regionalization efforts, Puget Sound Naval Shipyard began reporting as PSNS & IMF -- Bremerton Site & Naval Base Kitsap beginning in CY2004.

Marine Corps

The Marine Corps continues to implement pollution prevention measures and improve management practices and technologies to reduce the quantity of toxic and hazardous chemicals and materials needed to support mission requirements, and meet E.O. 13423 goals. From CY1994 through CY2000, the Marine Corps successfully achieved over a 90 percent reduction in toxic releases and off-site transfers.

In CY2006, Marine Corps facilities reported 3.3 million pounds of releases and off-site transfers, a 132 percent increase since CY2001, as depicted in Figure Y-21. Of the CY2006 Marine Corps TRI releases, range releases totaled 1.9 million pounds. When excluding the chemical amounts reported from operational range activities, the Marine Corp's releases and off-site transfers totaled 1.4 million pounds in CY2006, an increase of 80 percent.

As seen in Figure Y-22, releases to land and water represented the highest categories of TRI chemical releases in CY2006. TRI releases to water come primarily from nitrate compounds, which was the CY2006 top 10 chemical, as shown in Figure Y-23. TRI releases of nitrate compounds into water primarily come from wastewater treatment operations. The Marine Corps is looking at ways to reduce these releases while meeting Clean Water Act compliance-driven requirements.

The change over time of the top 10 chemicals reported in CY2001, are shown in Figure Y-24. The top three chemicals (copper, lead compounds, and nitrate compounds) were also the CY2006 top three chemicals, although not in the same order. These chemicals entered the land during training activities conducted on operational ranges.

Figure Y-25 depicts the CY2006 top 10 installations. This list is similar to the CY2001 top 10 installations as shown in Figure Y-26, with a majority of the facilities being operational ranges. The Marine

Figure Y-21 Marine Corps TRI Reportable Quantities, including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
On-site to Water	338,784	652,454	740,369	1,222,170	1,085,463	1,173,959	246.5%
On-site to Air	132,920	133,359	181,456	144,964	106,324	95,213	-28.4%
On-site Underground Injection	0	0	0	0	0	34,877	--
On-site Land	885,236	1,244,632	708,330	847,149	1,586,864	1,882,519	112.7%
Off-site to POTW	48	0	0	0	0	0	-100.0%
Off-site Treatment	7,291	7,416	30,914	0	6,247	5,747	-21.2%
Off-site Disposal	46,376	9,273	11,311	1,046	75,857	84,682	82.6%
Calculated Baseline	1,410,655	2,047,134	1,672,380	2,215,330	2,860,755	3,276,997	132.3%

Figure Y-22 Marine Corps TRI Reportable Quantities, not including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
On-site to Water	338,784	652,454	740,369	1,222,170	1,085,463	1,173,959	246.5%
On-site to Air	130,546	128,309	179,143	143,009	102,111	76,564	-41.4%
On-site Underground Injection	0	0	0	0	0	34,877	--
On-site Land	294,022	4,832	5,225	8,935	2,368	100,686	-65.8%
Off-site to POTW	48	0	0	0	0	0	-100.0%
Off-site Treatment	7,291	7,416	30,914	0	6,247	5,747	-21.2%
Off-site Disposal	3,376	9,117	11,311	1,046	1,557	2,156	-36.1%
Calculated Baseline	774,067	802,128	966,962	1,375,161	1,197,746	1,393,989	80.1%

Figure Y-23 CY2006 Top 10 Marine Corps Chemicals, including Ranges

Chemical Name	Pounds Released or Transferred
Nitrate Compounds	1,309,112
Copper	1,023,153
Lead Compounds	701,508
Lead	71,316
Nitroglycerin	44,709
Toluene	35,574
Phosphorous (Yellow or White)	34,420
Xylene (Mixed Isomers)	15,020
Dichloromethane	12,802
N-Methyl-2-Pyrrolidone	12,587

Corps continues to identify processes where toxic releases can be reduced using pollution prevention efforts, and works to identify and implement targeted reduction efforts for specific areas of opportunity. For example, at Camp Pendleton, nitrate compound releases are produced from the wastewater treatment process from mostly base housing and office buildings. A new tertiary treatment plant was completed at Camp Pendleton, which is expected to significantly reduce nitrate compounds in the wastewater effluent. In addition, Marine Corps Air Station (MCAS) Cherry Point releases decreased in CY2006, as shown in Figure Y-26. This installation was awarded a biological nutrient removal project at the wastewater treatment plant, which is scheduled for completion in 2008. This project is also expected to reduce releases of nitrate compounds.

Figure Y-24 Change in CY2001 Top 10 Marine Corps Chemicals, including Ranges (Pounds Released or Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Copper	452,758	826,495	314,313	433,950	686,577	1,023,153	126.0%
Lead Compounds	370,284	348,540	337,341	365,011	636,115	701,508	89.5%
Nitrate Compounds	338,793	654,266	742,095	1,230,239	1,087,207	1,309,112	286.4%
Lead	111,662	62,266	68,924	42,982	112,852	71,316	-36.1%
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	65,740	62,406	103,819	55,390	0	0	-100.0%
Methyl Ethyl Ketone	28,087	27,770	30,444	Delisted	--	--	--
Dichloromethane	19,741	20,395	14,370	20,018	16,770	12,802	-35.2%
Toluene	11,901	12,763	11,878	40,972	38,977	35,574	198.9%
Ethylene Glycol	7,506	6,772	30,292	71	506	131	-98.3%
Xylene (Mixed Isomers)	3,792	2,819	1,000	3,940	20,783	15,020	296.1%

Figure Y-25 CY2006 Top 10 Marine Corps Installations, including Ranges

Installation Name	Pounds Released or Transferred
Camp Lejeune	537,250
Chocolate Mountain Aerial Gunnery Range Complex	503,152
Camp Pendleton	422,251
Camp Lejeune Range	419,548
Twentynine Palms Range	353,074
Camp Pendleton Range	251,183
MCB Quantico	195,601
Quantico Range Complex	194,862
Parris Island Depot	94,264
Parris Island Range	84,278

Figure Y-26 Change in CY2001 Top 10 Marine Corps Installations, including Ranges (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Twentynine Palms Range	293,501	261,452	48,813	97,089	622,052	353,074	20.3%
Camp Pendleton Range	237,607	188,052	138,740	150,165	302,750	251,183	5.7%
Camp Lejeune	212,219	225,179	230,068	719,992	504,922	537,250	153.2%
Camp Pendleton	203,810	254,585	344,959	309,485	300,586	422,251	107.2%
Quantico Range Complex	108,000	116,919	118,256	94,941	146,343	194,862	80.4%
Camp Lejeune Range	84,398	175,760	195,382	332,892	306,153	419,548	397.1%
Parris Island Range	67,402	72,575	77,511	78,556	77,882	84,278	25.0%
MCAS Cherry Point	49,787	107,223	169,042	89,537	78,281	61,926	24.4%
Puuloa Training Facility	48,200	6,200	10,673	10,480	3,270	16,581	-65.6%
Camp Billy Machen Gunnery Range	46,270	0	47,627	0	0	0	-100.0%

Air Force

The Air Force sustains, restores, and modernizes its natural infrastructure to ensure operational capability, while maximizing the military value and optimizing the economical, ecological, and community value. Through targeted pollution prevention, weapon system recapitalization, and technology investment, the Air Force has achieved a 69 percent reduction in TRI releases since 1994. In CY2006, Air Force facilities reported 1.5 million pounds of releases and off-site transfers, a 34 percent decrease since CY2001, as depicted in Figure Y-27. Of the CY2006 Air Force TRI releases, range releases totaled 0.5 million pounds. When excluding the chemical amounts reported from operational range activities, the Air Force's releases and off-site transfers totaled 1.1 million pounds in CY2006, a decrease of 35 percent, as shown in Figure Y-28.

Continued source reduction and pollution prevention efforts resulted in a five percent reduction of non-range related TRI releases and more than a six percent reduction in releases from fuel-related activities in CY2006 from CY2005. Proactive management practices have been essential in these efforts, including the on-site reuse of off-specification jet fuel and the off-site transfer of fuel to a recycling facility.

In CY2006, there was a 45 percent increase in range-related TRI releases due to escalated wartime mission requirements and training activities. As seen in Figures Y-29 and Y-30, copper is the top chemical released or transferred off-site by the Air Force in CY2001 and CY2006. Copper is an essential chemical used during Air Force operations on ranges.

In CY2006, 75 percent of Air Force's TRI releases and off-site transfers were placed into the following categories: painting, cleaning and deicing operations (42 percent); nitrate compounds from wastewater treatment (18 percent); munitions and

Figure Y-27 Air Force TRI Reportable Quantities, including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	76,596	143,779	99,607	150,299	267,942	159,501	108.2%
On-site to Air	903,420	640,405	659,105	514,921	517,098	557,398	-38.3%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	862,788	1,917,706	752,263	653,780	436,736	646,832	-25.0%
Off-site to POTW	211,722	220,171	181,712	108,087	85,407	35,090	-83.4%
Off-site Treatment	96,746	54,221	146,125	71,658	73,574	53,507	-44.7%
Off-site Disposal	124,355	277,749	123,548	116,835	51,045	60,013	-51.7%
Calculated Baseline	2,275,627	3,254,031	1,962,360	1,615,580	1,431,802	1,512,341	-33.5%

Figure Y-28 Air Force TRI Reportable Quantities, not including Ranges (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	76,596	142,298	99,607	150,298	267,752	159,501	108.2%
On-site to Air	901,741	638,546	658,325	513,993	515,629	538,690	-40.3%
On-site Underground Injection	0	0	0	0	0	0	--
On-site Land	198,065	1,244,809	222,494	225,120	120,794	210,470	6.3%
Off-site to POTW	211,722	220,171	181,712	108,087	85,406	35,090	-83.4%
Off-site Treatment	96,746	54,221	146,125	71,658	73,574	53,507	-44.7%
Off-site Disposal	124,355	277,749	123,548	116,835	50,947	55,596	-55.3%
Calculated Baseline	1,609,225	2,577,794	1,431,811	1,185,991	1,114,103	1,052,854	-34.6%

Figure Y-29 CY2006 Top 10 Air Force Chemicals, including Ranges

Chemical Name	Pounds Released or Transferred
Copper	245,181
Ethylene Glycol	160,955
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	153,344
Dichloromethane	129,977
Barium Compounds	121,800
Nitrate Compounds	107,752
Lead Compounds	83,963
Lead	71,056
Toluene	65,796
Tetrachloroethylene	60,356

range operations which contributed metals and metallic compounds (33 percent); and barium from coal burning operations and toluene and xylene from fuel-related releases (16 percent).

Figure Y-31 depicts the top 10 Air Force installations in CY2006, based on total releases and off-site transfers. This list is similar to the top 10 installations in CY2001, as shown in Figure Y-32. A majority of the installations on the lists are associated with ranges. Because wartime mission requirements are high, additional reductions will be difficult due to the critical nature of these operations, the absence of suitable and safer substitutes, and increased wartime training requirements. In maximizing military value and optimizing the economical, ecological, and community value of its assets, the Air Force will continue to invest in areas that will reduce TRI releases while ensuring combat capability.

Figure Y-30 Change in CY2001 Top 10 Air Force Chemicals, including Ranges (Pounds Released or Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Copper	274,435	309,513	246,994	248,655	216,938	245,181	-10.7%
Aluminum (Fume Or Dust)	271,464	0	0	12,335	0	12,223	-95.5%
Nitrate Compounds	249,563	302,297	276,402	187,807	277,084	107,752	-56.8%
Methyl Ethyl Ketone	221,491	211,474	196,010	Delisted	--	--	--
Dichloromethane	208,825	208,745	207,093	181,578	143,327	129,977	-37.8%
Barium	197,364	137,000	115,000	122,000	0	0	-100.0%
Hydrochloric Acid (1995 and after "Acid Aerosols" only)	154,010	159,005	144,626	171,518	184,304	153,344	-0.4%
Glycol Ethers	114,250	18,215	15,139	15,641	16,954	20,780	-81.8%
Ethylene Glycol	108,586	88,166	117,303	104,454	145,154	160,955	48.2%
Phenol	95,780	48,131	53,312	35,123	36,462	32,846	-65.7%

Figure Y-31 CY2006 Top 10 Air Force Installations, including Ranges

Installation Name	Pounds Released or Transferred
Nellis AFB Training Range	205,718
Hill AFB (Ogden ALC)	177,518
Eielson AFB	162,596
Wright Patterson AFB	120,284
Robins AFB	119,764
Tinker AFB	109,490
Eglin AFB Range	107,465
Arnold AFB	104,356
Avon Park Air Force Range	80,385
Air Force Plant No. 6	68,390

Figure Y-32 Change in CY2001 Top 10 Air Force Installations, including Ranges (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001–CY2006 % Change
Tinker AFB	479,956	193,605	314,686	110,287	126,941	109,490	-77.2%
Nellis AFB Training Range	309,581	422,261	374,558	168,529	99,395	205,718	-33.6%
Hill AFB (Ogden ALC)	260,588	336,373	332,612	272,605	243,118	177,518	-31.9%
Eielson AFB	226,152	213,902	155,080	164,612	0	162,596	-28.1%
Robins AFB	220,351	176,146	140,921	105,403	101,439	119,764	-45.7%
Barry M. Goldwater Range/Luke AFB	171,312	20,372	20,832	21,080	26,731	7,091	-95.9%
Air Force Plant No. 4	145,868	166,998	177,836	124,877	116,334	56,798	-61.1%
Eglin AFB Range	129,333	80,761	17,386	120,131	113,871	107,465	-16.9%
Wright Patterson AFB	95,623	87,015	92,639	120,058	94,013	120,284	25.8%
Air Force Plant No. 6	65,481	47,360	50,977	56,119	168,105	68,390	4.4%

DLA

The Defense Logistics Agency's (DLA's) TRI releases are primarily based on the production levels for DoD's Ozone-Depleting Substance (ODS) Reserve located in Richmond, Virginia. Defense Supply Center Richmond closed in 2001, and moved to a modernized facility. The loss of production in 2001; resulted in lower-than-normal TRI releases, as seen in Figure Y-33.

In CY2006, DLA had very low TRI releases and no reportable off-site transfers. Compared to CY2005, DLA's TRI releases decreased by 60 percent in the CY2006. This is consistent with the CY2006 TRI chemical totals, which also remained low, as shown in Figure Y-34.

Figure Y-35 represents the change over time of the top DLA chemicals from the CY2001 baseline. As shown, several of the chemicals had reported reductions in releases and off-site transfers.

The new ODS facility in Richmond incorporates the most innovative technologies available for reclamation of ODS solvents and refrigerants. This is required for important DoD weapons systems; therefore, the Richmond facility will continue to process ODSs. As shown in Figures Y-36 and Y-37, the Defense Supply Center Richmond's CY2006 totals have increased from the CY2001 baseline. DLA anticipates that as production increases, chemical usage will also increase.

Figure Y-33 DLA TRI Reportable Quantities (Pounds Released or Transferred)

Category	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
On-site to Water	0	0	0	0	0	0	0%
On-site to Air	869	4,791	5,084	3,790	2,568	1,034	19.0%
On-site Underground Injection	0	0	0	0	0	0	0%
On-site Land	0	0	0	0	0	0	0%
Off-site to POTW	0	0	0	0	0	0	0%
Off-site Treatment	0	0	0	0	0	0	0%
Off-site Disposal	0	0	0	0	0	0	0%
Calculated Baseline	869	4,791	5,084	3,790	2,568	1,034	19.0%

Figure Y-34 CY2006 Top DLA Chemicals

Chemical Name	Pounds Released or Transferred
Dichlorotetrafluoroethane	408
Bromotrifluoromethane	335
Dichlorodifluoromethane (CFC-12)	163
Bromochlorodifluoromethane	108
Trichlorofluoromethane	20
Polycyclic Aromatic Compounds	0
Benzo(g,h,i)perylene	0
Lead	0
Mercury	0

Figure Y-35 Change in CY2001 Top DLA Chemicals (Pounds Released or Transferred)

Chemical Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Bromotrifluoromethane	471	1,867	3,156	691	976	335	-28.9%
Dichlorodifluoromethane (CFC-12)	220	1,562	726	613	382	163	-25.9%
Bromochlorodifluoromethane	80	0	0	1,362	592	108	35.0%
Dichlorotetrafluoroethane	55	1,362	1,202	991	511	408	641.8%
Trichlorofluoromethane	43	0	0	133	107	20	-53.5%

Figure Y-36 CY2006 Top DLA Installations

Installation Name	Pounds Released or Transferred
Defense Supply Center Richmond	1,034
Defense Distribution Depot of Susquehanna	0
Defense National Stockpile Center New Haven Depot	0
Defense National Stockpile Center Warren Depot	0

Figure Y-37 Change in CY2001 Top DLA Installations (Pounds Released or Transferred)

Installation Name	CY2001	CY2002	CY2003	CY2004	CY2005	CY2006	CY2001-CY2006 % Change
Defense Supply Center Richmond	869	4,791	5,084	3,790	2,568	1,034	19.0%